

Application No. 10/712,173
January 20, 2006
Page 8 of 19

Docket No. CM01560L - Kim, et al.

REMARKS

The issues currently in the instant application are as follows:

- Claims 1-34 were subject to a three-way restriction.
- Claim 11 was rejected under 35 U.S.C. § 112(1).
- Claims 1-2 and 4-6 were rejected under 35 U.S.C. 112(2).
- Claims 1-3, 7-13, and 19-24 were rejected under 35 U.S.C. § 102(b).
- Claims 1, 7, and 13 were rejected under 35 U.S.C. § 102(e).
- Claims 2-6, 8-12, and 16-18 were rejected under 35 U.S.C. 103(a).

Applicant traverses all the outstanding rejections and requests reconsideration and withdrawal thereof in light of the amendments and remarks contained herein.

Restriction Requirement

In response to the Examiner's restriction requirement, Applicant confirms election of Invention I (defined by claims 1-13 and 16-24) with traverse.

Invention II (defined by claims 14-15) is not independent of claim 1 in Invention I and thus does not meet the "independent and distinct" requirements for a restriction. Note that claim 14 lines 3-4 specifically refer to claim 1. Claim 15 directly depends upon claim 14.

Claims 25-34, directed to Invention III, have been canceled.

Amendments to the Claims

Independent claim 1 has been amended to incorporate elements from claims 3-5.

Claim 3 has been amended in light of the amendment to claim 1.

Application No. 10/712,173
January 20, 2006
Page 9 of 19

Docket No. CM01560L - Kim, et al.

Claims 4-6 have been amended to fix typographical errors and also in light of the amendment to claim 1. The Examiner is correct in interpreting the erroneous term "thermoelastic" as "thermoplastic."

Claim 8 has been amended to depend from claim 1 instead of claim 7.

Claim 13 has been amended to result in strict antecedent basis.

No amendment made was related to the statutory requirements of patentability unless expressly stated herein. No amendment was made for the purpose of narrowing the scope of any claim, unless Applicant argued herein that such amendment was made to distinguish over a particular reference or combination of references.

35 U.S.C. § 112(1)

Claim 11 was rejected under 35 U.S.C. § 112(1) as failing to comply with the enablement requirement. The Examiner believes that claim 11 does not have the proper support in the original specification as filed because the specification does not provide any teaching or discussion on capsules that encapsulate a quantity of solvent, emulsifier, monomer, or initiator.

Articles discussing encapsulation of polymerization reactants can be easily found on the World Wide Web, and thus one having ordinary skill in the art can be presumed to know how to make the instant invention. For example, Applicant submits the first result of a Google search of "capsule microemulsion polymerization reactants" (Applicant's first set of search terms). The result includes a basic summary of miniemulsion polymerization with a section entitled "Encapsulations by miniemulsion process" and showing a (first) Figure 5 diagramming steps of adding water and surfactant to monomers, encapsulating the monomers using high shear, and polymerizing the capsules to form polymer particles. Note also the number of articles cited in the newly-submitted reference.

Application No. 10/712,173
January 20, 2006
Page 10 of 19

Docket No. CM01560L - Kim, et al.

Additionally, a reference cited by the Examiner and used in a rejection of claim 11, U.S. Patent No. 5,596,051 (Jahns), also discusses microencapsulation of various materials (such as oil, dyes, pigments, and catalysts) and opening these microcapsules by pressure or elevated temperature to release the protected contents. The Examiner cannot seek to apply Jahns in a rejection on one hand and then argue that one of ordinary skill in the art would not be aware of Jahns as a teaching.

Reconsideration and withdrawal of the rejection of claim 11 under 35 U.S.C. § 112(1) is respectfully requested.

35 U.S.C. § 112(2)

Claims 1-2 and 4-6 were rejected under 35 U.S.C. 112(2), as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The phrase "the average dispersed body size" in claim 1 lines 11-12 and claim 2 line 2 refers back to the phrase "an average dispersed body size" found in claim 1 lines 6-7.

Original claims 4-6 contained a typographical error. Claims 4-6 have been amended to recite "thermoplastic" rather than "thermoelastic."

Applicant requests reconsideration and withdrawal of the rejection of claims 1-2 and 4-6 under 35 U.S.C. § 112(2).

35 U.S.C. § 102(b) - Mahachek

Claims 1 and 13 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,231,196 (Mahachek). Mahachek fails to show the structure recited in amended claim 1, namely a first thermoplastic substrate, a first layer with thermally coalescable material having an average dispersed body size in one or more first areas and thermally coalescable material having coalesced bodies substantially exceeding the

Application No. 10/712,173
January 20, 2006
Page 11 of 19

Docket No. CM01560I, - Kim, et al.

average dispersed body size in one or more second areas, and a second thermoplastic substrate covering the first layer. Thus, claim 1 is not anticipated by Mahachek. Claim 13 depends directly from claim 1 and also is not anticipated by Mahachek. Additionally, the process suggested by Mahachek creates mini-fractures in the plastic or glass substrate (laser etching) rather than fuses bodies in a layer of thermally coalescable material. Reconsideration and withdrawal of the rejection of claims 1 and 13 under 35 U.S.C. § 102(b) as being anticipated by Mahachek is respectfully requested.

35 U.S.C. § 102(b) - Asher

Claims 1-3, 7-13, and 19-24 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,094,273 (Asher). Asher does not show "the thermally coalescable materials within the one or more second areas coalesced into bodies characterized by an average dimension that substantially exceeds the average dispersed body size" as recited in claim 1. The crystalline colloidal array (CCA) of Asher does not have thermally coalescable material. Instead the particles in the CCA of Asher undergo a reversible volume phase transition from a hydrated, swollen state to a dehydrated, collapsed state. See column 5 lines 10-24 of Asher. Thus, temperature change causes the materials of Asher to hydrate or dehydrate rather than coalesce or remain uncoalesced.

The "thermally coalescable" language of claim 1 is not optional because claim 1 also recites "the thermally coalescable material within the one or more second areas is coalesced." Thus, coalescence is required in claim 1.

Claim 1 is not anticipated by Asher. Claims 2-3 and 7-13 depend directly or indirectly upon claim 1 and thus are also not anticipated by Asher.

Asher also fails to show "a network of first polymer molecules dispersed within the polymerizable monomer" as recited in claim 19. The CCA of Asher has poly(N-isopropylacrylamide) (PNIPAM) colloids in a suitable solvent such as water. The

Application No. 10/712,173
January 20, 2006
Page 12 of 19

Docket No. CM01560L - Kim, et al.

polymer molecules of Asher are not dispersed within a polymerizable monomer as recited in claim 19.

Claim 19 is not anticipated by Asher. Claims 20-24 depend directly on indirectly upon claim 19 and thus are also not anticipated by Asher. Reconsideration and withdrawal of the rejection of claims 1-3, 7-13, and 19-24 under 35 U.S.C. § 102(b) as being anticipated by Asher is respectfully requested.

35 U.S.C. § 102(e) - Feng

Claims 1, 7, and 13 are rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,627,299 (Feng). Feng, like Mahacheck, fails to show the structure recited in amended claim 1, namely a first thermoplastic substrate, a first layer with thermally coalescable material having an average dispersed body size in one or more first areas and thermally coalescable material having coalesced bodies substantially exceeding the average dispersed body size in one or more second areas, and a second thermoplastic substrate covering the first layer. Thus, claim 1 is not anticipated by Feng. Claims 7 and 13 depend directly from claim 1 and also are not anticipated by Feng. Additionally, the process suggested by Feng bleaches or chars pigments in a plastic substrate rather than fuses bodies in a layer of thermally coalescable material. See column 5 lines 15-31 of Feng. Reconsideration and withdrawal of the rejection of claims 1, 7, and 13 under 35 U.S.C. § 102(e) as being anticipated by Feng is respectfully requested.

35 U.S.C. § 103(a) - Feng

Claim 2 is rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,627,299 (Feng). See the previous discussion of Feng with respect to the § 102(e) rejection of claim 1. Claim 2 depends directly from claim 1 and is not unpatentable in view of Feng. Reconsideration and withdrawal of the rejection of claim

Application No. 10/712,173
January 20, 2006
Page 13 of 19

Docket No. CM01560L – Kim, et al.

2 under 35 U.S.C. § 103(a) as being unpatentable in view of Feng is respectfully requested.

35 U.S.C. § 103(a) - Mahachek

Claim 2 is rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,231,196 (Mahachek). See the previous discussion of Mahachek with respect to the § 102(b) rejection of claim 1. Claim 2 depends directly from claim 1 and is not unpatentable in view of Mahachek. Reconsideration and withdrawal of the rejection of claim 2 under 35 U.S.C. § 103(a) as being unpatentable in view of Mahachek is respectfully requested.

35 U.S.C. § 103(a) – Asher and Mori

Claims 4–6 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,094,273 (Asher) in view of U.S. Patent No. 6,652,983 (Mori). See the previous discussion of Asher with respect to the § 102(b) rejection of claim 1. Asher and Mori are in two totally different fields as can be discerned by reading the two references and is also indicated by the very different international patent classifications and U.S. patent classifications of the two references. Asher discusses crystalline colloidal arrays (CCA) of charged particles while Mori discusses in-mold decorating. It would not be obvious to modify the CCA of Asher to be an in-mold decoration in accordance with Mori. Additionally, the teachings of Mori do not overcome the deficiencies of Asher, for example the lack of thermally coalescable material recited in claim 1. Claims 4–6 depend directly or indirectly upon claim 1 and thus are not unpatentable in view of Asher and Mori. Reconsideration and withdrawal of the rejection of claims 4–6 under 35 U.S.C. § 103(a) as being unpatentable in view of Asher and Mori is respectfully requested.

Application No. 10/712,173
January 20, 2006
Page 14 of 19

Docket No. CM01560L – Kim, et al.

35 U.S.C. § 103(a) – Mahachek and Ginsberg

Claim 3 is rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,231,196 (Mahachek) in view of U.S. Patent No. 6,543,163 (Ginsberg). See the previous discussion of Mahachek with respect to the § 102(b) rejection of claim 1. The teachings of Ginsberg do not overcome the deficiencies of Mahachek, for example the lack of thermally coalescable material recited in claim 1. Claim 3 depend directly from claim 1 and is not unpatentable in view of Mahachek and Ginsberg. Reconsideration and withdrawal of the rejection of claim 3 under 35 U.S.C. § 103(a) as being unpatentable in view of Mahachek and Ginsberg is respectfully requested.

35 U.S.C. § 103(a) – Mahachek and Numrich

Claims 3-6 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,231,196 (Mahachek) in view of U.S. Patent No. 6,543,163 (Ginsberg) and U.S. Patent No. 6,475,420 (Numrich). See the previous discussion of Mahachek and Ginsberg with respect to the § 103(a) rejection of claim 3. The teachings of Numrich do not overcome the deficiencies of Mahachek and Ginsberg, for example the lack of thermally coalescable material recited in claim 1. Claims 3-6 depend directly or indirectly from claim 1 and are not unpatentable in view of Mahachek, Ginsberg, and Numrich. Reconsideration and withdrawal of the rejection of claims 3-6 under 35 U.S.C. § 103(a) as being unpatentable in view of Mahachek, Ginsberg, and Numrich is respectfully requested.

35 U.S.C. § 103(a) – Feng and Numrich

Claims 5-6 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,627,299 (Feng) in view of U.S. Patent No. 6,475,420 (Numrich). See the previous discussion of Feng with respect to the § 102(e) rejection of claim 1. The teachings of Numrich do not overcome the deficiencies of Feng, for example the lack of

Application No. 10/712,173
January 20, 2006
Page 15 of 19

Docket No. CM01560L - Kim, et al.

thermally coalescable material recited in claim 1. Claims 5-6 depend directly or indirectly from claim 1 and is not unpatentable in view of Feng and Numrich. Reconsideration and withdrawal of the rejection of claims 5-6 under 35 U.S.C. § 103(a) as being unpatentable in view of Feng and Numrich is respectfully requested.

35 U.S.C. § 103(a) – Feng and Magerstedt

Claim 8 is rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,627,299 (Feng) in view of U.S. Patent No. 5,840,791 (Magerstedt). See the previous discussion of Feng with respect to the § 102(e) rejection of claim 1. The teachings of Magerstedt do not overcome the deficiencies of Feng, for example the lack of thermally coalescable material recited in claim 1. Claim 8 depends directly from claim 1 and is not unpatentable in view of Feng and Magerstedt. Reconsideration and withdrawal of the rejection of claim 8 under 35 U.S.C. § 103(a) as being unpatentable in view of Feng and Magerstedt is respectfully requested.

35 U.S.C. § 103(a) – Mahachek and Magerstedt

Claim 8 is rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,231,196 (Mahachek) in view of U.S. Patent No. 5,840,791 (Magerstedt). See the previous discussion of Mahachek with respect to the § 102(b) rejection of claim 1. The teachings of Magerstedt do not overcome the deficiencies of Mahachek, for example the lack of thermally coalescable material recited in claim 1. Claim 8 depends directly from claim 1 and is not unpatentable in view of Mahachek and Magerstedt. Reconsideration and withdrawal of the rejection of claim 8 under 35 U.S.C. § 103(a) as being unpatentable in view of Mahachek and Magerstedt is respectfully requested.

Application No. 10/712,173
January 20, 2006
Page 16 of 19

Docket No. CM01560L - Kim, et al.

35 U.S.C. § 103(a) – Mahachek and Asher

Claims 9-12 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,231,196 (Mahachek) in view of U.S. Patent No. 6,094,273 (Asher). See the previous discussion of Mahachek with respect to the § 102(b) rejection of claim 1 and the previous discussion of Asher with respect to the § 102(b) rejection of claim 1. Combining the teachings of Mahachek and Asher (which both lack any discussion of thermally coalescable material) does not result in any suggestion or teaching of the thermally coalescable material recited in claim 1. Claims 9-12 depend directly or indirectly from claim 1 and are not unpatentable in view of Mahachek and Asher. Reconsideration and withdrawal of the rejection of claims 9-12 under 35 U.S.C. § 103(a) as being unpatentable in view of Mahachek and Asher is respectfully requested.

35 U.S.C. § 103(a) – Feng and Asher

Claims 9-12 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,627,299 (Feng) in view of U.S. Patent No. 6,094,273 (Asher). See the previous discussion of Feng with respect to the § 102(e) rejection of claim 1 and the previous discussion of Asher with respect to the § 102(b) rejection of claim 1. Combining the teachings of Mahachek and Asher (which both lack any discussion of thermally coalescable material) does not result in any suggestion or teaching of the thermally coalescable material recited in claim 1. Claims 9-12 depend directly or indirectly from claim 1 and is not unpatentable in view of Feng and Asher. Reconsideration and withdrawal of the rejection of claims 9-12 under 35 U.S.C. § 103(a) as being unpatentable in view of Feng and Asher is respectfully requested.

35 U.S.C. § 103(a) – Feng, Asher, and Jahns

Claim 11 is rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,627,299 (Feng) in view of U.S. Patent No. 6,094,273 (Asher) and U.S. Patent

Application No. 10/712,173
January 20, 2006
Page 17 of 19

Docket No. CM01560L – Kim, et al.

No. 5,596,051 (Jahns). See the previous discussion of Feng and Asher with respect to the § 103(a) rejection of claim 10. Jahns provides teachings regarding microencapsulation of oil and other substances, but none of Jahns, Feng, and Asher discuss thermally coalescable material as recited in claim 1. Claim 11 depends directly from 10 and indirectly from claim 1 and is not unpatentable in view of Feng, Asher, and Jahns. Reconsideration and withdrawal of the rejection of claim 11 under 35 U.S.C. § 103(a) as being unpatentable in view of Feng, Asher, and Jahns is respectfully requested.

35 U.S.C. § 103(a) – Mahachek, Asher, and Jahns

Claim 11 is rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,231,196 (Mahachek) in view of U.S. Patent No. 6,094,273 (Asher) and U.S. Patent No. 5,596,051 (Jahns). See the previous discussion of Mahachek and Asher with respect to the § 103(a) rejection of claim 10. Adding the teachings of Jahns to Mahachek and Asher (which both lack any discussion of thermally coalescable material) does not result in any suggestion or teaching of the thermally coalescable material recited in claim 1. Claim 11 depends directly from claim 1 and indirectly from claim 1 and is not unpatentable in view of Mahachek, Asher, and Jahns. Reconsideration and withdrawal of the rejection of claim 11 under 35 U.S.C. § 103(a) as being unpatentable in view of Mahachek, Asher, and Jahns is respectfully requested.

35 U.S.C. § 103(a) – Asher and Jahns

Claim 16 is rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,094,273 (Asher) in view of U.S. Patent No. 5,596,051 (Jahns). The microcapsules of Jahns are designed to be opened by pressure or elevated temperature or bases. See column 6 line 65 to column 7 line 30 of Jahns. The poly(N-isopropylacrylamide) (PNIPAM) colloids of Asher are not designed to be opened. There is no evidence that the microcapsules of Jahns are ionized in any way, thus the

Application No. 10/712,173
January 20, 2006
Page 18 of 19

Docket No. CM01560L – Kim, et al.

microcapsules of Jahns would not form a CCA as taught by Asher. Additionally, the color created by Asher is created by separate layers of CCAs (see column 10 lines 42-57 of Asher) and not by releasing a dye by opening a microcapsule as suggested in Jahns. In fact, it makes no sense to replace the PNIPAM colloids of Asher with microcapsules in accordance with Jahns. Finally, although Jahns discusses microencapsulating inks, Jahns never discusses the color of the polymer shell. There is no teaching in either Asher or Jahns of polymeric particles with a core characterized by a first color and a shell characterized by a second color as recited in claim 16. Claim 16 is not unpatentable in view of Asher and Jahns. Reconsideration and withdrawal of the rejection of claim 16 under 35 U.S.C. § 103(a) as being unpatentable in view of Asher and Jahns is respectfully requested.

35 U.S.C. § 103(a) – Asher, Jahns, and Mori

Claims 17-18 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,094,273 (Asher) in view of U.S. Patent No. 5,596,051 (Jahns) and U.S. Patent No. 6,652,983 (Mori). See the previous discussion of Asher and Jahns with respect to the § 103(a) rejection of claim 16. As stated previously, Asher and Mori are in two totally different fields and it would not be obvious to modify the CCA of Asher to be an in-mold decoration in accordance with Mori. Additionally, the teachings of Mori do not overcome the deficiencies of Asher and Jahns, for example the lack of polymeric particles with a core characterized by a first color and a shell characterized by a second color. Claims 17-18 depend directly or indirectly upon claim 16 and are not unpatentable in view of Asher, Jahns, and Mori. Reconsideration and withdrawal of the rejection of claims 17-18 under 35 U.S.C. § 103(a) as being unpatentable in view of Asher, Jahns, and Mori is respectfully requested.

Application No. 10/712,173
January 20, 2006
Page 19 of 19

Docket No. CM01560L -- Kim, et al.

S U M M A R Y

The application is in condition for allowance and a favorable response at an early date is earnestly solicited. Should the Examiner have any questions, comments, or suggestions, the Examiner is invited to contact Applicant's representative at the telephone number indicated below.

Please charge any fees associated herewith, including extension of time fees, to Deposit Account 502117.

Respectfully submitted,

By: Sylvia Chen 20JAN2006
Sylvia Chen
Attorney for Applicant
Registration No. 39,633
Tel. No. (847) 523-1096
Fax No. (847) 523-2350
Email: Sylvia.Chen@motorola.com

Please send correspondence to:
Motorola, Inc.
Intellectual Property Dept. (SYC)
600 North U.S. Highway 45, AS437
Libertyville, IL 60048
Customer Number: 20280